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ORIGINAL PAPER

Change in Mental Health Stigma After a Brief Intervention Among Internally Displaced Persons in Central Sudan

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Abstract
Stigmatizing attitudes towards people with mental illness is a worldwide phenomenon, This Longitudinal study aimed to determine the level of stigma, among the internal displaced persons in central Sudan and explore possible changes in stigma associated with an intervention. 1549 persons were interviewed using standardized stigma attitude tools. The study revealed high level of stigma among our respondents and there was no significant difference in attitudes towards mental illness observed after the intervention. The intervention was not associated with change in stigma. However, the findings can inform policy to create sustainable national mental health strategies to address the stigma.

Keywords Stigma · IDPs · Mental health · Sudan

Background

Mental illness stigma has adverse and harmful effects on the lives of people with mental health problems (Corrigan et al. 2012), and substantially increases the societal burden of the disease (Evans-Lacko et al. 2013). It is a global phenomenon, (Thornicroft et al. 2009) and stigma is defined as ''the negative perception held by the community towards people with mental disorders" (WHO 2001). The negative effects of stigma towards people with mental illness can influence all the life domains, including living, learning, working, and socialization (Hinshaw and Cicchetti 2000).

Most studies on mental illness and stigma have been conducted in high income countries (Angermeyer and Dietrich 2006). Previous studies on the pattern of mental health outcomes suggest a better prognosis for the severely mentally ill due to lower levels of stigma in low-income countries (Cohen 1992) and some studies from Africa suggested that stigma might be less common in Muslim countries (Fabrega 1991). Evidence contrary to this view began to emerge from Muslim countries where stigma was found to be a major burden to both the patients and their families (Shurka 1983; Shibre et al. 2001; Kadri et al. 2004). The early observations about reduced level of stigma in Africa was probably due to lack of research with ample sample size rather than culturally receptive attitudes to mental illness (Corrigan and Watson 2002).

With limited funding for mental health services, centralized institutions, slow implementation of community mental health services, limited human resources and inequitably distribution, most people requiring mental health care do not receive any kind of intervention in low income countries (Organization 2001; Van Ginneken et al. 2013; Mascayano et al. 2015).

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In addition, accessing treatment for mental illness seems to be affected by the attitudes of the population towards mental health (Sartorius 2007) (Corrigan et al. 2014). For example, a study on community attitudes from West Africa demonstrated lack of knowledge regarding causation and a belief that those with mental illness are dangerous and unsuitable for normal social contact (Gureje et al. 2005). A study in Nigeria among outpatient clients and staff found that supernatural causes were the most common interpretation of mental illness among both patients and caregivers (Adebowale and Ogunlesi 1998; Read et al. 2006) and that families with member with mental illness are also subjected to stigmatization (Ohaeri and Fido 2001). In South Africa mental illness was understood as lack of will and as a result of having insufficient religious faith (Hugo et al. 2003).

Sudan is by the UN and World Bank classified as a lower-middle income country characterized by the lack of adequacy and effectiveness of the mental health services due to limited human and physical resources and mental illness stigma and discrimination (Mascayano et al. 2015). In 2009 WHO did a mental health assessment in Sudan and found despite evidence of mental health stigma, a lack of mental health awareness and no coordinating bodies to oversee public education and awareness campaigns (WHO 2009.). Reducing stigma has become an increasingly important topic within public health and clinical care, advocacy and policy development and there are effective programs to reduce the stigma associated with mental illness (Organization 2001; Sartorius 2007).

Sudan has one the highest rates of IDP's in the world with figures standing at around 5 million currently. We have in an earlier paper showed that the one year prevalence of any mental health disorders was of more than 50% in the IDP population (Salah et al. 2013). There is scarce knowledge about the level of stigma toward mental health in this population and few studies testing the effect of awareness campaigns. The population of the two study areas taking part in this study migrated from different parts of Sudan more than 30 years ago, due to the civil war in South Sudan that broke out in 1983 as well as drought, famine and civil war affecting mainly Darfur and Kordofan regions in years later. The aims of this study are firstly to determine the level of mental health related stigma among an IDP population and study possible socio demographic correlates. Secondly, to explore whether there were changes in stigma associated with an awareness campaign intervention among displaced people in central Sudan.

Method

Setting

The two study areas from central Sudan were selected randomly in phase one of the study, with Mayo from Khartoum state representing the urban and Moby from Gezira state the rural area. The estimated number of IDPs in central Sudan was in 2010 between 1.3 and 1.7 million people. The population of the two areas is from different ethnic groups and different languages with Arabic as the most common language. There is a rural hospital nearby Mayo and a health center for the Mobi area. These two health facilities, however, do not provide mental health services.

Participants

The target population included all adults aged 18 and above, living in the study areas. Persons who did not speak Arabic and persons with severe intellectual disabilities were excluded. During October 2010 (phase one), a total sample of 1876 subjects were included by simple random sampling using spin the pen method. During data collection, the method was used to give a direction, but then the procedure was repeated four times and gave new directions. These participants were given mental health awareness intervention and followed up for interview after 1 year (phase two). A total of 327 participants were lost to follow up and at phase two we were able to interview 1549 participants. This gives a follow up response rate of 82.6%. We did a sensitivity analysis and imputed the missing data and the results were compared with actual data (without imputation).We found that the estimates did not change.

Data Collection

The data were collected by 20 clinical psychologists who were equally divided into two groups (for Gezira and Khartoum) with an equal gender representation. All members of the research team underwent a 1-week intensive training programme in research interview techniques in order to enhance their ability to properly utilize the research instruments and appropriately approach the community. They also conducted a pilot testing of the interview protocol.

Community guides were involved to facilitate a positive community response. Each data collection team consisted of three members—two interviewers and one community guide. Written informed consent was obtained from all participants. In Phase one, clear marks were made after every household had been interviewed to enable the same households to be accurately identified in Phase two. All household members above 18 years of age were interviewed. More details on method are given in an previous article (Salah et al. 2013).

Measurements

Attitudes towards people with mental illness were assessed by six items scoring agreed or disagreed with each

statement: feel ashamed if someone in your family was diagnosed with a mental disorder, feel afraid to have a conversation with someone who has a mental disorder, upset or disturbed about working on the same job as someone with a mental disorder, unable to maintain a friendship with someone who has a mental disorder, feel upset or disturbed about rooming with someone with a mental disorder and unwilling to marry someone with a mental disorder. The questions were developed by the World Psychiatric Association (Stuart and Arboleda-Florez 2001) and have subsequently been used in other studies on social distance in different countries (Gaebel et al. 2002; Adewuya and Makanjuola 2008; Economou et al. 2012) and in the World Psychiatric Association's stigma reduction program (Gaebel et al. 2002).

Raising Awareness Program

In collaboration with the Federal Ministry of Health, the raising awareness program was implemented in the study area 3 months after the baseline survey was held in the months of October to December 2011. Around 30 mental health professionals were involved in planning, coordination and implementation of the program. The purpose was to reduce stigma, by raising community awareness about mental illness. The program content included sessions of facts about mental illness, characteristic symptoms, recovery strategies and the public stigmatizing attitudes.

Information, education and communication materials (IEC) such as brochures and posters were provided by the Federal Ministry of Health. The program was delivered in five sections lasting for 4 h. The first 2 h was presentation about mental illness with questions and discussions, while the last part was drama presented by the IDPs youth union. The drama aimed to reflect on topics related to how the community would deal with people suffering from mental illness.

Statistical Analysis

Descriptive statistics in the form of frequencies and proportions were used to describe the socio-demographic characteristics of the participants at baseline. The normality assumption for data on age and family size were assessed and rejected using the Kolmogorov–Smirnov test. Therefore, the data on age and family size were described by medians and interquartile range and differences between subjects from Khartoum and Gezira were determined using the Mann–Whitney U test. Associations between categorical variables at baseline were established from Chi square tests of associations. The main outcome variable, attitudes towards mental illness was ordered in three categories; 0 (no stigma), 1–3 (moderate), and > 3 (severe). These data were collected at two different time points, T1 and T2. We used the Cochran–Armitage test to look for a trend across all categories of attitudes towards mental illness by socio-demographic factors at T1. We used the McNemar test to determine whether the proportion of subjects who had a negative attitude as opposed to positive attitude towards stigma (negative/ positive) changed after the intervention.

To investigate the changes in attitude and the factors that were associated with attitudes towards mental illness, an ordered logistic regression model was considered. One of the main assumptions underlying the ordered logistic regression model is known as the proportional odds assumption. This states that the relationship between each pair of attitudes towards mental illness is the same. For example, level 0 versus levels 1 and 2 combined is the same as level 0 and level 1 combined versus level 2. Based on the likelihood ratio test with $P < 0.01$, the proportional odds assumption was violated. Therefore, a generalized ordered logistic model was fitted to the data on attitudes towards mental illness. In particular, we fitted a mixed-effects generalized linear model with the logit link function in order to account for the clustering effect of the observations.

The modeling process proceeded in two steps; first, using the mixed-effects generalized linear models, univariable analysis of each independent variable was performed. Secondly, two separate adjusted models were fitted to the data; (i) a full model adjusted for all socio-demographics and (ii) a model based on all variables with $P \leq 0.20$ from the univariate analysis. We purposefully selected variables with $P \leq 0.20$ in order to build a parsimonious model without missing important variables (Lemeshow and Hosmer 2005). We used both the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) in model selection. The criteria state that a model with the smallest AIC/BIC value among model candidates should be considered a better fit.

The Chi square test for trend in proportions (Cochran–Armitage test) was performed using the R software and the other analyses were performed using StataSE 14. The significance level was set at $\alpha = 0.05$.

Ethical Clearance

The research protocol was approved by REK (Regional Committees for Medical Heath Research Ethics) in Norway and the Federal Ministry of Health in Sudan.

Results

Table 1 shows the socio-demographic characteristics of both study areas; Mayo in the northern part of Khartoum with a total of 849 respondents representing 54.8% of the total respondents and the rural area of Mobi in Gezira with 700

(45.2%) respondents. The overall median age was 28 years and the majority were women (58.0%). Most of the respondents were married (68.6%), and were originally from western Sudan (50.7%). About 13% had permanent jobs, 23% temporary jobs, and more than half (64%) were unemployed. Economic status varied from extremely poor to poor, and 46.7% had an income of less than 200 SD per month. Almost 19% had no formal education, 22% had received Islamic religious education (khalwa), 40% had attended elementary school and 19% had university education.

Table 2 summarizes demographic characteristic across three levels of response to the stigma attitude questions; no stigma, between one and three and more than three negative responses. Only 8% of the respondents had no stigma attitude towards people with mental illness, 31% had 1–3 sigma items and most respondents (61%) had more than 3 stigma items. The findings also showed a positive trend in the proportion of subjects with khallowa and secondary education as the number of stigma items increased. The proportion of those on temporal and permanent employment also showed a positive trend as the number of stigma items increased on a Cochran–Armitage analysis.

Table 3 shows the changes in the distribution of participants who had a negative attitude to stigma as opposed to a positive attitude on six different stigma attitude items. The McNemar's test determined that there was a statistically significant increase in the proportion of those with a negative attitude to feeling upset or disturbed about working with someone who has mental illness, $P = 0.05$.

Table 4 shows the unadjusted and adjusted proportional odds ratios (POR) obtained by fitting a mixed-effects generalized linear model to the data on attitudes towards mental illness. The univariate analysis showed that age, level of education, employment status, level of income, place (urban/rural) and place of origin in Sudan were significantly associated with attitudes towards mental illness (P-values < 0.05).

Table 1 Socio-demographic characteristics of the 1549 IDPs at baseline by place of residence in Sudan at T 1

Socio-demographic	Khartoum (n = 849)	Gezira (n = 700)	Total (N = 1549)	*P*-value
Age in years, median (Q1, Q3)	28.0 (22.0, 37.0)	30 (22.0, 37.0)	28.0 (22.0, 37.0)	0.31
Family size, median (Q1, Q3)	6.0 (4.0, 8.0)	6.0 (4.0, 8.0)	6.0 (4.0, 8.0)	0.78
Length of stay, median (Q1, Q3)	18.0 (10.0, 22.0)	18.0 (10.0, 24.0)	17.0 (10.0, 23.0)	0.92
Gender, n (%)				
Male	339 (39.9)	311 (44.4)	650 (42.0)	0.07
Female	510 (60.1)	389 (55.6)	899 (58.0)	
Marital status, n (%)				
Single	241 (28.4)	245 (35.0)	486 (31.4)	0.01
Married	608 (71.6)	455 (65.0)	1063 (68.6)	
Level of education, n (%)				
Illiterate	139 (16.4)	153 (21.9)	292 (18.9)	0.01
Khalwa	220 (25.9)	127 (18.1)	347 (22.4)	0.01
Elementary	317 (37.3)	304 (43.4)	621 (40.1)	0.01
Secondary and above	173 (20.4)	116 (16.6)	289 (18.7)	0.06
Employment status, n (%)				
Unemployed	569 (67.0)	424 (60.6)	993 (64.1)	0.01
Temporary	173 (20.4)	175 (25.0)	348 (22.5)	0.03
Permanent	107 (12.6)	101 (14.4)	208 (13.4)	0.30
Household income, n (%)				
Less than 200 SD/ per month	376 (44.3)	348 (49.7)	724 (46.7)	0.03
More than 200 SD/ per month	473 (55.7)	352 (50.3)	825 (53.3)	
Place of origin, n (%)				
North (Northern States, River Nile)	17 (2.0)	15 (2.1)	32 (2.1)	0.89
South Sudan	72 (8.5)	111 (15.9)	183 (11.8)	0.01
East (Red Sea, Kassala, Gadarif)	59 (6.9)	44 (6.3)	103 (6.6)	0.64
West (Kordofan, Darfur)	456 (53.7)	330 (47.1)	786 (50.7)	0.01
Middle (Khartoum, Gaziera, Sennar, Damazeen)	245 (28.9)	200 (28.6)	445 (28.7)	0.90
Reason for forced migration				
War	816 (96.1)	635 (90.7)	1451 (93.7)	< 0.01
Famine and drought	33 (3,9)	65 (9.3)	98 (6.3)	

Table 2 Stigma categories associated with socio-demographic in phase one

Socio-demographic	Number of stigma categories			*P*- value
	0: n = 77	1–3: n = 486	> 3: n = 986	
Age in year, mean (SD)[a]	31.8 (8.1)	29.7 (8.5)	30.1 (9.8)	0.17
Place				
Khartoum	46 (5.4%)	276 (32.5%)	527 (62.1%)	0.13
Gazera	31 (4.4%)	210 (30%)	459 (65.5%)	0.13
Gender				
Male	30 (4.6%)	217 (33.4%)	403 (62.0%)	0.46
Female	47 (5.2%)	269 (30%)	583 (64.8%)	0.46
Marital status				
Single	27 (5.6%)	141 (29.8)	318 (65.4%)	0.59
Married	50 (4.7%)	245 (32.5%)	668 (63.8%)	0.59
Education				
Non	11 (3.8%)	85 (29.1%)	196 (79.1%)	0.13
Khallowa	14 (4.0%)	91 (26.2%)	242 (69.7%)	0.01
Elementary	31 (5.0%)	204 (32.9%)	386 (62.2%)	0.40
Secondary and above	21 (7.3%)	106 (36.7%)	162 (56.1%)	< 0.01
Employed				
Non	50 (5.0%)	293 (29.5%)	650 (65.5%)	0.12
Temporal	24 (6.9%)	119 (34.2%)	205 (58.9%)	0.02
Permanent	3 (1.4%)	74 (35.6%)	131 (63.0%)	0.45
Original place N(SD)				
North (N. stats, River Nile)	3 (9.4%)	13 (40.6%)	16 (40.6%)	0.08
South	3 (1.6%)	79 (43.2%)	101 (55.2%)	0.21
East, Kassala, Gadarif	10 (9.7%)	26 (25.0%)	68 (65.4%)	0.60
West (Kordofan, Darfour)	47 (6.0%)	224 (28.5%)	514 (65.5%)	0.58
Middle (Khartoum, Gazera)	14 (3.1%)	144 (32.4%)	286 (64.5%)	0.27

[a]Test of trend for age across ordered categories of stigma

Table 3 Difference in mental health stigma attitude in the two phases (N = 1549)

Stigma attitudes items	T1	T2		*P*-value
		Positive attitude	Negative attitude	
Do you feel afraid to have a conversation with someone who has a mental illness	Positive attitude	561	22	0.12
	Negative attitude	12	954	
Do you feel you are upset or disturbed about working with someone who has mental illness	Positive attitude	534	25	0.05
	Negative attitude	12	978	
Could you maintain a friendship with someone who has a mental illness	Positive attitude	776	32	0.13
	Negative attitude	20	721	
Do you feel unwilling to share a room with someone with a mental disorder	Positive attitude	580	24	0.54
	Negative attitude	19	926	
Do you feel ashamed if people knew someone in your family was diagnosed with a mental illness	Positive attitude	391	17	0.87
	Negative attitude	19	1122	
Could you marry someone with a mental illness	Positive attitude	436	19	1.00
	Negative attitude	19	1075	

Model 1 is based on all socio-demographic factors that were considered in the analysis whereas model 2 is based on variables with $P \leq 0.20$ from the univariate analysis. We selected Model 2 because it had both smaller values of Akaike information criterion (AIC) and Bayesian information criterion (BIC). The results showed that the likelihood of severe stigma was 32% lower among participants in the age group 30–39 years compared to participants in the age

Table 4 Proportional odds ratio (POR) and their 95% CI obtained from the ordered logistic regression models on attitudes towards mental illness

Socio-demographics	Univariate analysis		Model 1		Model 2	
	Crude POR	*P*-value	Adjusted POR	*P*-value	Adjusted POR	*P*-value
Change in attitude (ref: Phase 1)						
Phase 2	1.02 (0.88, 1.18)	0.78	1.08 (0.90, 1.29)	0.43	0.98 (0.84, 1.13)	0.77
Age (ref: 19–29)						
30–39	0.70 (0.59, 0.83)	< 0.01	0.68 (0.53, 0.88)	< 0.01	0.68 (0.53, 0.88)	< 0.01
≥ 40	0.98 (0.80, 1.19)	0.81	0.90 (0.66, 1.21)	0.49	0.90 (0.67, 1.22)	0.49
Marital status (ref: Unmarried)						
Married	0.89 (0.76, 1.04)	0.15	0.78 (0.60, 1.02)	0.07	0.80 (0.62, 1.03)	0.08
Education level (ref: Illiterate)						
Khalwa	1.13 (0.89, 1.42)	0.32	1.13 (0.80, 1.59)	0.48	1.12 (0.80, 1.58)	0.51
Elementary	0.84 (0.68, 1.03)	0.10	0.75 (0.55, 1.09)	0.06	0.75 (0.55, 1.01)	0.06
Secondary and above	0.64 (0.51, 0.81)	< 0.01	0.50 (0.35, 0.72)	< 0.01	0.50 (0.35, 0.72)	< 0.01
Employment (ref: unemployed)						
Temporary	0.78 (0.65, 0.93)	0.01	0.74 (0.56, 0.99)	0.04	0.72 (0.56, 0.93)	0.01
Permanent	0.94 (0.76, 1.17)	0.57	0.95 (0.67, 1.35)	0.79	0.92 (0.67, 1.26)	0.59
Income levels (ref: < 200 SD)						
200+	1.40 (1.21, 1.61)	< 0.01	1.58 (1.27, 1.96)	< 0.01	1.58 (1.27, 1.95)	< 0.01
Place of origin (ref: Khartoum)						
Gezira	1.20 (1.04, 1.39)	0.01	1.25 (1.01, 1.54)	0.05	1.25 (1.01, 1.54)	0.05
Origin (ref: West)						
North	0.53 (0.27, 1.05)	0.07	1.34 (0.63, 2.85)	0.45	1.33 (0.63, 2.81)	0.46
South	0.72 (0.53, 0.99)	0.05	1.42 (0.63, 3.21)	0.40	1.42 (0.63, 3.20)	0.40
East	0.94 (0.61, 1.45)	0.78	1.70 (0.83, 3.48)	0.14	1.70 (0.83, 3.46)	0.15
Middle	1.00 (0.79, 1.28)	0.98	1.60 (0.77, 3.30)	0.21	1.59 (0.77, 3.29)	0.21
Gender (ref: Males)						
Females	1.09 (0.95, 1.27)	0.23	1.08 (0.83, 1.40)	0.56		

Model 1 is a full model adjusted for all socio-demographic variables

Model 2 is based on variables with P ≤ 0.20 from the univariate analysis

group 19–29 years ($P < 0.01$). Having secondary education or above significantly decreased the odds of severe stigma by 50% compared to being illiterate, having a Khalwa or elementary education combined. The analysis also showed that the likelihood of severe stigma was 28% lower if the participants were on temporary work than if they were jobless ($P = 0.01$). However, the odds of severe stigmatization significantly increased by 58% among participants with an income ≥ 200 SD compared to those who earned less. Gezira residents were 25% more likely to have severe stigmatization compared to residents from Khartoum ($P = 0.05$).

Discussion

The main finding from this study was that the level of negative attitudes to mental illness is high among the adult population living in long run IDP camps in central Sudan. These findings confirm reports from other previous studies in Africa applying the same set of questions to evaluate social distance (Adewuya and Makanjuola 2008; Crabb et al. 2012; Ayazi et al. 2014). Similar studies from high income countries using the same set of questions shows less negative attitude and social distance toward mental illness (Gaebel et al. 2002). This might be due to the relatively higher level of education, more positive media coverage about mental health and higher effectiveness of mental health services in developed countries.

Low education was indeed significantly associated with mental illness stigma in dose response pattern even after adjustment for other factors. This is in line with other studies showing that low education is an important predictor for level of stigma both in developed and developing countries (Hugo et al. 2003; Ayazi et al. 2014). Living in rural areas which is associated with lower education was also found to be associated with higher level of stigma, which is similar to results in other African studies (Adewuya and Makanjuola 2008; Ayazi et al. 2014). The finding that participants with the highest monthly income and permanent

employment had higher level of stigma was a surprise and counters what we found for education.

We were not able to show any effect of the community awareness intervention on change in attitudes which might be due to inadequate intervention or to short time span for changes in negative perception related to mental illness to happen. One reason for inadequate response may be related to the use of the clinical psychologist. They were not familiar with the setting they operated in and might also have created a distance to the mainly poor inhabitants of the camps. We recommend for the future to depend on the local personnel like the primary health worker, working in primary health setting and by introducing the mental health services into the primary health care. Other factors such as poverty, low education, social exclusion, and the use of traditional healers might possibly having a stronger effect and countering the assumed effects of the intervention.

It is important to acknowledge that one cannot assume that increasing awareness about mental illness will lead to changes in attitudes and behavior as cultural factors are hard to change. Attitudes about mental illness are also about adequate and reliable health services for mental health problems (Kakuma et al. 2010). Several studies have shown that stigma can be reduced after interventions, but the effects may last only for some months (Jorm and Oh 2009). This might also have been the case for our study, but since we were able to measure only twice we have not been able to detect any immediate effect of the intervention. Other reviews of the literature have concluded that we still are not able to offer an empirical basis for evidence-based interventions to reduce misapprehensions about mental illness and improve attitudes towards individuals with mental health problems (Angermeyer and Dietrich 2006).

This study had some limitations. We did not specify the type of mental illness when asking participants and this could have led them into giving vague and inaccurate answers. The term mental illness is a broad concept and yet studies show that the level of stigma varies depending on the type of mental illness (Jorm and Oh 2009). Being the first of its kind in the country, the strength of the study is that it can serve as a basis for developing mental health policies and programs. There may further be some selection bias due to the use of spin the pen method, although this potential problem was mitigated by using the spin the pen several times.

Conclusion

There is a high level of mental illness stigma among the IDPs in central Sudan especially in the rural areas and among those with low education. The awareness intervention we applied in the community did not have any effect in reducing negative attitudes towards people with mental illness.

It is important to create sustainable national mental health policy strategies to address stigma also including groups with specific needs like IDP's. Likely important is it to provide mental health services and community psycho-education within the primary health care and make treatment for mental health problems available and affordable.

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Compliance with Ethical Standards

Conflict of interest No conflict of interest stated.

Informed Consent Written and voluntary informed consent was obtained from all participants.

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